

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086

(For candidates admitted from the academic year 2011 –12)

SUBJECT CODE: 11BT/MC/AE44

**B.Sc. DEGREE EXAMINATION, APRIL 2013
BRANCH V(a) – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY
FOURTH SEMESTER**

**COURSE : MAJOR – CORE
PAPER : ANATOMY AND EMBRYOLOGY OF ANGIOSPERMS
TIME : 3 HOURS MAX. MARKS: 100**

SECTION-A

A. ANSWER THE FOLLOWING (1x18=18)

I. Choose the correct Answer

1. Secondary growth in plants is initiated by
 - a) Lateral meristems
 - b) apical meristems
 - c) Primordial meristems
 - d) intercalary meristems
2. Ubisch bodies are produced by
 - a) Tapetum
 - b) Endothelium
 - c) Middle layers
 - d) None of the above
3. Collenchyma commonly found in
 - a) leaves and floral parts dicots
 - b) leaves and stems of monocot
 - c) leaves and stems of dicot
 - d) leaves and floral parts of monocots
4. Tyloses are produced by
 - a) Xylem parenchyma
 - b) xylem vessels
 - c) wood fibres
 - d) None of the above
5. Secondary growth is anomalous in
 - a) *Annona*
 - b) *Helianthus*
 - c) *Pinus*
 - d) *Dracaena*

II. Fill in the blanks:

6. Phellogen is otherwise called _____.
7. The functionless region of secondary wood is called _____.
8. The microspore divides mitotically to form a _____ cell & a generative cell.
9. Trilacunar condition is primitive in _____.
10. *Urtica* has _____ hairs.

III. State true or false

11. Collateral, conjoint, closed vascular bundles are present in sunflower stem
12. Cambium and cork cambium are not derived from intercalary meristem.
13. In the active phloem, the phloem parenchyma and the ray cells, have bordered pits
14. *Polygonum* type of embryo sac is tetrasporic type.

IV. Match the following

- | | | |
|---------------------|---|--------------|
| 15. Chloroplast | - | Polyembryony |
| 16. Periderm | - | wood rays |
| 17. Monocotyledons | - | guard cells |
| 18. Secondary xylem | - | phelloderm |

V. ANSWER ANY SIX FROM THE FOLLOWING :**(6x3=18)**

19. Write the characteristic features of meristematic cells
20. What are lenticels? Describe
21. Describe the xylem vessel.
22. Briefly write notes on phloem parenchyma and fibres.
23. Write short notes on structure of monocot leaves.
24. Describe Dendrochronology.
25. What is tapetum? What is the importance of it?
26. Describe double fertilization.
27. Comment on leaf abscission.

SECTION-B

ANSWER ANY FOUR OF THE FOLLOWING IN ABOUT 200 WORDS. (4x6=24)
DRAW DIAGRAMS WHEREVER NECESSARY.

28. Briefly describe the vascular cambium.
29. Write the distinguishable features of sap wood and heartwood
30. Describe the anomalous secondary thickening in Dracaena.
31. Describe the different types of endosperm formation.
32. Write in detail the dicot embryo development.
33. Mention the nodal types and anatomy of angiosperm.

SECTION-C

ANSWER ANY TWO OF THE FOLLOWING IN ABOUT 1000 WORDS. (2x20=40)
DRAW DIAGRAMS WHEREVER NECESSARY.

34. Describe in detail the classification of meristems.
35. Tabulate the distinguishable features in stem and root of dicots and monocots with illustrations.
36. Write in detail the structure of epidermis, stomatal types & appendages of dicots.
37. Draw and describe the types of embryo sac development.
